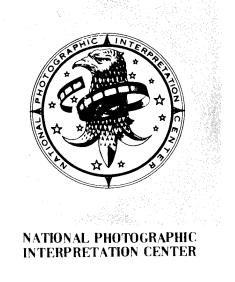
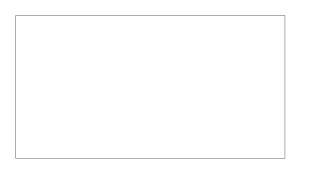
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PHOTOGRAPHIC INTERPRETATION REPORT

PROBABLE HYBRID ROCKET ENGINE TEST POSITION UFA ROCKET ENGINE TEST FACILITY USSR



AUGUST 1973
COPY NO § 22
5 PAGES

PIR-030/73





ATION OR ACTIVITY	NAME			COUNTRY	
Rocket E	ngine Te	est Facility		UR	
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RENCE	54-	-59-05N 056-04-20	E		
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				NEGATION DATE (It req. ired)	
				NA	
Rocket Er and 2). That the S	ngine Te The iden Soviet Un	st Facility, USSR, atification of the nation's probable hy	, on p ew te: brid	the test position was identified at Ufa photography Figures 1 st position provides the first indication rocket engine program has moved from one of acceptance testing.	
horizonta	al test bu	ilding with four f	iring	ty, which consists primarily of a large positions, was apparently complete and	
horizonta operation been enge craft Eng miles son	al test but al when aged in time Plan uth of th	first observed in the testing of SA-2 t B26 test facility.	iring April 2 and ,	positions, was apparently complete and 1962. The test facility has probably SS-N-2 sustainer engines for Ufa Air, which is approximately 10 nautical	2
horizonta operation been engacraft Eng miles som 3. the large facility si served in raphy in shape cavation would pr	al test but all when aged in the plan uth of the horizon ince 196 at the form was proposed at the form	the testing of SA-2 t B26 etest facility. I w test position, contail test building, 2. Initial construction of a small irregular en enlarged and bably prepared for more stable base for	iring April 2 and onstru repre ction ular e	positions, was apparently complete and 1962. The test facility has probably SS-N-2 sustainer engines for Ufa Air-	2
horizonta operation been engacraft Engamiles som 3. the large facility sales served in raphy in shape cavation would preight hole excavated 4. complete firing bloobserved gallery of the served served gallery of the served gallery of the served gallery of the served gallery of the served served gallery of the served served gallery of the served se	al test but all when aged in the Plan with of the horizon ince 196 and the form was proposed at the form ock, which between connected the connected the horizon and the form ock, which between connected the horizon and the form ock, which between the connected the horizon ock, which between the connected the horizon ock, which between the connected the horizon ock, which is and the form ock, which is a supplied to the connected the horizon ock, which is a supplied to the horizon ock, which is a supplied to the horizon ock, which is a supplied to the horizon occurrence to the horizon o	the testing of SA-2 t B26 e test facility. w test position, contained the stable base for enlarged and bably prepared for more stable base for evertical support the four center of the new position.	and April 2 and 2	positions, was apparently complete and 1 1962. The test facility has probably SS-N-2 sustainer engines for Ufa Air, which is approximately 10 nautical ucted in the center of the blast apron for esents the first major change at this activity for the new position was obexcavation in the blast apron on photog- the excavation, then rectangular The exing with reinforced concrete, which he engine test firing block. In addition,	

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TOP SECKET RUFF	
	20/(1
5. When the new test position was next observed on photography	25X1
portion of the roof. When first observed, it was thought this object was prob-	25X1
ably a propellant run tank and that the presence of this single tank, in addition	
to other common features, provided a strong comparison with a slightly larger but similar test position at the Primorsk Rocket Engine Test Facility	25 X 1
The test position at Primorsk is probably used for research and devel-	25X1
opment testing of hybrid propulsion systems.	,
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TOF SECRET ROLL	25 X 1
6. Because in a typical hybrid rocket engine only the oxidizer is liquid and the fuel an inert solid, the importance of what was thought to be a single propellant run tank was readily apparent. However, a subsequent study of other photography of poorer interpretability from the same mission obtained on	
revealed that only a portion of the object thought to be a propellant tank had been observed. Figure 2 shows a sketch of the object in its entirety as observed on. It appeared to be resting on the probable firing block in the same position as the object seen. It	25X1 25X1 25X1 25X1
roof. Because of its size, configuration, and location within the test position,	25 X 1
	25 X 1
- 3 -	25 X 1
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the object is now believed to be a probable hybrid rocket engine (containing the inert solid and thrust chambers) rather than a probable propellant run tank.

7. The fact that the probable engine remained in place suggests a "battleship" engine may have been used to assess performance characteristics of components of the new test position before beginning a test program involving production line engines. A "battleship" engine is a specially constructed reusable engine which can be used for repeated test firings following replacement after each test of components such as fuel grains, igniters, and nozzles. Although the absence of a single tank containing the oxidizer would seem to detract from the identification of this new test position as being hybrid associated, it is possible that the oxidizer is supplied to the engine through one of the pipes which connects it to the large horizontal test building. It is also possible that the position is not yet operational and that a tank has yet to be installed. In any case, even though the absence of a propellant run tank and the presence of a probable hybrid rocket engine are features which are not comparable with the test position at Primorsk, the other similarities, including the environmental shelter, probable firing block, and pipe gallery, provide sufficiently strong indicators to retain the identification of a probable hybrid rocket engine test position.

8. In view of past history of this facility as an acceptance testing rather than a research and development facility, the presence of this new test position suggests hybrid rocket engines have now moved into the production phase.

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DOCUMENT	
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